

Application No. 10/666,045
Response to Office Action mailed December 10, 2004

Patent
Attorney Docket No. 88267-38

II. AMENDMENTS TO THE CLAIMS

Please find below a listing of claims that will replace all prior versions, and listings, of claims of the application:

Listing of claims:

1. (original) A stacking apparatus for assembly of electrochemical cells comprising:
 - a supporting structure;
 - at least one stacking head having an adjustable holding member adapted to hold an electrochemical laminate of a pre-determined length and having means for adjusting the shape of said electrochemical laminate;
 - said at least one stacking head being operative to stack a plurality of said electrochemical laminates of the pre-determined length one on top of the other, during stacking said adjustable holding member holding each particular electrochemical laminate of the pre-determined length in a shape such that a central portion of the particular electrochemical laminate of the pre-determined length is deposited first followed by a motion of said adjustable holding member that progressively lowers the remainder of the particular electrochemical laminate of the pre-determined length, thereby preventing air entrapment between adjacent electrochemical laminates of the pre-determined length in the stack.
2. (original) A stacking apparatus as defined in claim 1, wherein said adjustable holding member includes a vacuum system generating a negative pressure that holds said pre-determined length of electrochemical laminate.

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3. (original) A stacking apparatus as defined in claim 2, wherein said adjustable holding member includes a plate made of a micro-porous material through which the vacuum system generates said negative pressure.
4. (original) A stacking apparatus as defined in claim 3, wherein said adjustable holding member includes a vacuum chamber positioned adjacent said plate of micro-porous material.
5. (original) A stacking apparatus as defined in claim 1, further comprising mechanical cutting means adjacent said stacking head and adapted to cut a continuous length of electrochemical laminate to said pre-determined length.
6. (original) A stacking apparatus as defined in claim 5, wherein said mechanical cutting means includes a rotary knife.
7. (original) A stacking apparatus as defined in claim 1, wherein said at least one stacking head includes two adjustable holding members rotatably mounted onto said at least one stacking head.
8. (original) A stacking apparatus as defined in claim 7, wherein said two adjustable holding members are rotatably mounted through a slot system guiding the rotational movement of said two adjustable holding members, thereby preventing damage to said electrochemical laminate of the pre-determined length.
9. (original) A stacking apparatus as defined in claim 1, wherein said at least one stacking head is movable vertically and horizontally within said supporting structure.

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10. (original) A stacking apparatus as defined in claim 1, comprising a plurality of stacking heads mounted side by side on said supporting structure such that a plurality of electrochemical cells may be assembled simultaneously.
 11. (original) A stacking apparatus as defined in claim 1, further comprising a treated surface onto which a plurality of said electrochemical laminates of the pre-determined length are stacked.
 12. (original) A stacking apparatus as defined in claim 1, further comprising at least one carriage platform having a treated surface onto which a plurality of said electrochemical laminates of the pre-determined length are stacked.
 13. (withdrawn) A process for assembling a plurality of electrochemical laminates to form a battery comprising the steps of :
 - laminating a continuous length of anode film with a continuous length of pre-assembled half cell comprising a current collector, a cathode film and an electrolyte separator film;
 - cutting the laminate into pre-determined lengths of laminates;
 - stacking said pre-determined lengths of laminates one on top of the other in a shape such that a central portion of each said pre-determined length of laminate is deposited first, followed by a motion that progressively lowers the remainder of said pre-determined length of laminate, thereby preventing air entrapment between adjacent pre-determined lengths of laminate in the stack.
 14. (withdrawn) A process for assembling a plurality of electrochemical laminates to form a battery wherein said electrochemical laminates are in a charged state when being assembled one above the other.